



INFORMATION SHEET

DRAFT
For Internal Use Only

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CATAGORY : General

TITLE : Commercial to Residential Adaptive Reuse Project – Code Provisions

PURPOSE : The purpose of this Information Sheet is to provide pertinent code provisions and to highlight possible code exceptions to aid Adaptive Reuse commercial to residential occupancy projects under SFBC 111A

REFERENCES : San Francisco Building Code, Current Edition
San Francisco Existing Building Code, Current Edition and revised 2022 intervening code cycle edition effective on 7/1/2024
San Francisco Green Building Code
California Historical Building Code, Current Edition
California Mechanical Code
California Fire Code

OVERVIEW:

Adaptive Reuse projects are building alteration projects that involve the change of occupancy classification of a building, as a whole or of a portion of a building. The California Existing Building Code (CEBC) requires buildings that undergo changes of occupancies to comply with the California Building Code (CBC) for the resulting occupancy.

The purpose of this information sheet is to identify pertinent code provisions and to highlight possible code exceptions to aid Office/Commercial to Residential Adaptive Reuse projects under SFBC 111A.

Where design complexities and hardships exist that make it difficult or infeasible to comply with code requirements, design equivalencies to code requirements may be proposed by the design professional for consideration and approval on a case-by-case basis. See SFDBI Administrative Bulletin AB-005 Procedures for Approval of Local Equivalencies.

DISCUSSION:Building Envelope

Any building converting from Office/Commercial occupancy to Residential occupancy must comply with the allowable building height, number of stories, and floor area specified in CBC Chapter 5. The new residential occupancy must be fully fire sprinklered and be in compliance with CBC 903.2.8.

California Energy Code (CEC) Section 180 requirements for insulation and fenestration shall be required for envelope changes to the building; however, for qualified historic buildings, the California Historic Building Code (CHBC) may allow exceptions.

Exterior Walls

Exterior walls are required to have fire-resistance rating in compliance with CBC 705.5, with the required rating dependent on the fire separation distance from property line and the type of construction of the building. The change from Office/Commercial occupancy to Residential occupancy would generally not trigger the need to increase the fire resistance rating of the exterior walls, as residential occupancies have either less restrictive or equal fire rating requirements for exterior walls as office/commercial occupancies. However, if not already in compliance, the fire resistance rated assembly of the exterior wall will need to be improved to comply with the ratings as set forth in CBC 705.5.

Existing non-rated exterior walls may be maintained provided the exterior wall is protected with a water curtain design approved by the Building and Fire departments.

Exterior Wall Opening Protection

There are limitations to the amount of wall openings allowed in exterior walls per CBC 705.8. The exterior walls of a building is additionally protected through CBC 705.8 which specifies maximum area of exterior wall opening based on the building's distance away from the property line. Wherein the existing building is non-conforming to the code requirements, and existing openings exceed the allowable openings area, or the project proposes to provide additional exterior wall openings exceeding that allowed by the Code, then design equivalencies for exterior wall opening protection may proposed by the design professional for consideration. SFDBI Administrative Bulletin AB-009, Local Equivalency for Approval of New Opening in New and Existing Building Property Line Walls may provide a path for accommodation.

Means of Egress

The means of egress components will be evaluated to comply with CBC Chapter 10. Some major elements to consider are the number of exits required per story, minimum distance required between exits, minimum common path-of-travel distances, exit access travel distances, emergency escape and rescue access/paths for sleeping rooms, etc.

There are allowances for existing buildings, such as:

- Existing fire escapes are allowed to continue to serve as an egress component, CEBC 504
- Existing stairways are allowed exceptions from current code compliance where the existing space and construction does not allow a reduction in pitch or slope, CEBC 506.3

- Operable window opening size tolerances for windows serving the emergency escape and rescue openings, CEBC 506.4

Other means of egress component equivalencies may be proposed and evaluated on a case-by-case basis by the design professional.

Interior Environment - Ventilation

All new dwelling units shall be provided with natural or mechanical ventilation.

In addition, other than high-rise residential buildings, public corridors, public hallways, and other public spaces having openings into adjoining dwelling units, also need to be naturally ventilated by means of openable windows. In lieu of the required exterior openings for natural ventilation, mechanical ventilation may be provided as detailed in SFBC 1202.5.

Independent exhaust systems for the kitchen hood, bathroom(s), and dryer exhaust are required.

Adaptive Reuse projects in the Air Pollutant Exposure Zone shall incorporate an enhanced ventilation system to comply with San Francisco Health Code Article 38 mandated by the San Francisco Department of Public Health.

Interior Environment - Ventilation

Natural light is required for all habitable rooms per SFBC 1204.1. Where obtaining direct natural light through an exterior opening from the public way or yard is a hardship, light courts, with dimensions complying with CBC 1205, or skylights may be used. See SFDBI Information Sheet IE-02 for sizing of yards and courts adjacent to exterior openings that provide required natural light or ventilation is available for additional clarifications for court dimensions.

Where direct natural light is not achievable, natural light may be obtained through exterior glazed openings of adjoining spaces per CBC 1204.2.1 and SFDBI Information Sheet IE-01 on Natural Light.

Seismic and Wind

Where work involves substantial alteration to the building, an alteration in which the gravity load-carrying structural elements altered since the original construction support more than 30 percent of the total floor and roof area of the building or structure, as defined by SFBC 202, the building's lateral force resisting system for wind and seismic forces shall satisfy the current code requirements for new buildings, where reduced seismic forces is permitted per SFBC 503.11.

Non-structural alterations to elements such as walls, partitions, or ceilings on 2/3 or more of the number of stories of the building, require the building's lateral force resisting system for wind and seismic forces to satisfy current code requirements for new buildings, using design seismic forces reduced to 75 percent of prescribed forces per SFBC 304.4.

Structural engineers may determine a building has potential to reach a more optimal design by using an alternative design standard to the code prescriptive method. Performance-based design using ASCE 41, Seismic Evaluation and Retrofit of Existing Buildings, is permitted. For Risk Category II, the Life-Safety performance objective may be used as the structural performance level with the BSE-1E earthquake hazard level, and the Collapse Prevention performance objective may be used as the structural performance level with BSE-2E earthquake hazard level, CEBC 304.3.2

Buildings undergoing vertical and/or horizontal additions shall satisfy current code requirements for new buildings.

Accessibility and Federal Fair Housing Act:

The change of occupancy from Office/Commercial to Residential occupancy will be evaluated for compliance with the accessibility requirements of CBC chapter 11A and 11B.

In general, the change of occupancy to residential use within the existing building envelope does not invoke CBC Chapter 11A. However, if the scope of work includes an addition to the existing building, where the addition when considered alone meets the definition of 'covered multifamily dwelling' then the addition, common areas, and path of travel to the new addition will be subjected to chapter 11A.

Projects which are publically funded will be subjected to the requirements of CBC Chapter 11B for the percentage of units to accommodate mobility and communication features, as well as other accommodations for accessibility.

High-rise Buildings

High-rise buildings have additional special detailed requirements as set forth in CBC 403. In particular, the following are notable requirements to keep in mind for office/commercial to residential conversion of high-rise buildings:

A minimum of two fire service access elevators (FSAE) are required for buildings with an occupied floor more than 120 feet, CBC 403.6. Where the existing building did not have FSAE's nor does it house two elevator banks, alternative equivalent facilitations may be proposed as an equivalency to satisfy CBC 3003 FSAE. The proposed equivalency shall be reviewed and approved by SFDBI and SFFD in accordance with AB-005.

All portions of the high-rise building shall have a smoke control system per CBC 909. Where an equivalent smoke control/management protection system is approved by SFFD as a local equivalency, the mechanical system shall be designed to support the smoke control/management protection system accordingly. AB-047, Specific Submittal Criteria for Reports, Special Inspections, and Final Acceptance Testing of Smoke Control Systems, submittal requirements apply.

Additional emergency systems, where required, such as fire pumps, emergency generators, fire command center, and others shall comply with CBC 403. Equivalencies may be proposed and will be evaluated on a case-by-case-basis.

Use of Historic Building Code

Buildings identified as a historic resource may apply the California Historic Building Code such that repairs, alterations, or additions may preserve or rehabilitate qualified existing historic defining features of the building.

California Historic Building Code 8-901.5 provides exception to "envelope" California Energy Code requirements for historically significant features.

California Energy Code

Mechanical and plumbing systems shall be required to comply with California Energy code. The energy code requirements consist of mechanical and plumbing equipment efficiency/controls and mechanical ventilation requirements.

Lighting and power distribution systems shall comply with CEC for multi-family occupancies. The requirements consist of efficiency and control of lighting and power distribution systems.

San Francisco Green Building Code

Adaptive Reuse projects are exempt from San Francisco Green Building Code requirements as long as the alteration to the building does not fall within the definition of Major Alteration. Major Alteration is defined as alterations and additions in existing B, M, or R occupancies of 25,000 gross square feet or more, where the interior finishes are removed and there are significant upgrades to the structural and mechanical, electrical, and/or plumbing systems.

Projects that are Major Alterations shall meet San Francisco Green Building Code, AB-093 Implementation of Green Building Regulations, GS-2 submittal and include LEED/GPR score card.

SAN FRANCISCO FIRE DEPARTMENT REQUIREMENTS:

Low-Rise Buildings Conversion From B to R-2 Occupancy

1. The new R-2 occupancy must be fully sprinklered per 2022-NFPA 13, or per 2022-NFPA 13R (as indicated in 2022 CFC Section 903.3.1.2), and per SFFD 2022 Administrative Bulletin (AB) # 2.04. If car stackers, Energy Storage Systems (ESS), or Electric Vehicles (EV) charging stations are provided – compliance with applicable 2022 SFFD Administrative Bulletins AB # 4.25 and AB # 4.29) shall be required.
2. Class I Standpipe must be provided for the new R-2 occupancy where required by the 2022 CFC 905.3.1 and the 2022 SFFC Section 905.
3. The new R-2 occupancy shall be required to have a code complaint Fire Alarm (FA) system per current 2022 CFC and 2022 NFPA 72 and 2022 SFFD AB # 2.01. All dwelling units and sleeping units will be required to have UL 268 smoke detectors with low-frequency sounder bases. 120 VAC smoke alarms shall not be permitted by SFFD. Carbon Monoxide detection will be required where required by 2022 CFC, Section 915. Other signaling systems such as Two-Way Emergency Communications Systems (2-Way ECS) may be required by the SFFD to be provided on a case-by-case basis.
4. A radio test for Firefighters Emergency Two-Way Communication shall be performed within the new R-2 occupancy per SFFD 2022 AB # 2.01 Addendum G after the R-2 construction is completed. If the radio test passes, a new Emergency Responders Radio Communications System (ERRCS) shall not be required, However, if the radio test fails, an ERRCS shall be installed per current applicable codes.
5. Existing elevators shall not be required to be upgraded to meet current codes for gurney size, hoistway construction, and Firefighters Emergency Operation (FEO) including Phase I and Phase II emergency operation. The existing elevators may remain unchanged, or if desired by the owner/applicant, they may be modernized to meet current CA Elevator Safety Orders Group 4 Regulations. If the existing elevators are modernized, they shall be required to have a code compliant FEO interface with the new R-2 fire protection systems.
6. The SFFD will only require the HVAC/Mechanical Air-Moving system to shut down upon smoke detection per the current 2022 CA Mechanical Code (CMC) requirements.

